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hundred. The second (and larger) series will omit only the ubiquitous tropical species, especially those of the sea coast, and will cost thirty marks per hundred. The determinations will be elaborated by the undersigned, assisted by various monographers. He will be pleased to receive subscriptions to either series, but without prepayment. In view of the difficulties of transportation in the island, only a limited number of sets will be collected; and a prompt notification is requested from those who wish to subscribe. DR. IGN. URBAN.

Friedenau bei Berlin, Germany.

A new lichen.

In 1886 I found a peculiar lichen on rocks in Catawba River. I sent it to Dr. J. W. Eckfeldt, of Philadelphia, and he to Mr. H. Willey, of New Bedford. The latter called it an Opegrapha. Lately I sent Mr. Willey better plants than he had seen, and he says it is not an Opegrapha, and has named it *Buellia Catawbensis*, n. sp. He gives the following description: Thallus thickish, squamulose, peltate, orbicular, about ⅛ inch in diameter (I should say from ⅛ to ⅜), sub-entire, white, beneath black and naked: apothecia innate-superficial, the disk even with the thallus, black, at length crowded and confluent in the center of the thallus: hypothecium black, the proper exciple deficient: paraphyses distinct, agglutinate: spores oblong-ellipsoid, 2-loc., brown, .015-18 mm. by .007-8 mm.—On rocks along Catawba River Landsford, S. C., *Prof. H. A. Green*, 1886. A singular plant without near affinity. Taken from "Introduction to the Study of Lichens," by H. Willey. H. A. GREEN.

Chester, S. C.

CURRENT LITERATURE.

Physiological Botany: An abridgement of the student's guide to structural, morphological and physiological botany, by Robert Bentley, F. L. S. Prepared as a sequel to "Descriptive Botany," by Eliza A. Youmans. pp. xiv, 292. New York: D. Appleton & Co. 1886.

If any single term is to be used for this book, it should be *structural* rather than physiological botany, for it deals mostly with anatomy, less than one-third being devoted to physiology. We can not see that it is properly a sequel to Miss Youmans' "Descriptive Botany," for, with the exception of the impracticable "popular flora" of that work, this one covers much the same ground. It is a book of the old style, a compendious mass of facts, essential and trivial, about structure and function, condensed to the last degree, and therefore more useful as a book of reference than as a text book. Viewed in that light, it has not been improved by abridgment. It is of the "old style," in that it has no open questions. Its dictum, *ex cathedra* alike on fact and hypothesis, leaves the student no reason to doubt that all questions are forever settled.

With the structural part we have little fault to find, except with the illustrations, which are very uneven in quality; a few good, the majority only tolerable, and some very poor. The statements are in the main accurate, and in this it excels its predecessor. The physiological part of the book is of the least value. It is not entirely reliable, nor up to the date at which it was written (1883), if we may judge fairly by the abridgment. The treatment of assimilation, respiration and fertilization may be pointed out as especially weak, though it is difficult to get at the first two topics because of the illogical way in which the subject is presented. The author devotes a section each to the functions of the various sorts of cells, the nutritive organs, and the whole plant. As the functions of the whole plant depend entirely on the functions of its organs, and ultimately on the functions of the cells, we can not see the advantage of such a method. It involves much repetition and dissociation of allied topics.

Altogether the book is a compact text book, with no special excellences and some serious faults. It is no better and no worse than the common run of school books. There *is* a need for a small text book suitable for high schools and lower college classes, but this does not meet it. The book that does must present the essentials of botany clearly and attractively, without the encumbrance of trivial details, and with constant recognition of the biological significance of structure and function. Who will write it?

Sylloge Fungorum Omnium Hucusque Cognitorum. Digessit P. A. Saccardo. Volume iv, Hyphomycetes. Padova, 1886. Roy. 8°. pp. 808.

One can scarcely accord too much praise to the author of the series of works of which this is the fourth volume, for his untiring devotion to botanical science as shown especially in this monumental undertaking. The number of described species of fungi is very large, embracing a large proportion of cosmopolitan or widely distributed forms. To bring together the works containing the original descriptions is well nigh impossible to the ordinary student of fungi; and to have these descriptions collated, systematically and critically arranged, and issued in handy volumes is a service that the mycologist will appreciate, the more work he does.

The author has not hesitated to take the most difficult classes first, those in which assistance is most needed. The present volume includes forms of superficial growth, having conidial spores borne free upon aerial branches. Although this grouping makes a convenient classification for the purpose in hand, it brings together orders of very unequal grade, which in many instances have but slight relationship. The majority of the forms are undoubtedly to be set down as *fungi imperfecti*, whose real standing can not be fully determined until their life history is better understood; some of them, however, have had their sexual condition well worked out, and in a more natural system of classification could find a more appropriate place elsewhere.

In a work of this kind one is not surprised to find such slips as the insertion of *Ramularia Astragali* Ell. & Hol. twice, once under Ramularia

(p. 202) and once under Didymaria (p. 184), each with an independent translation of the characterization, but this detracts little from the general accuracy of the volume, and less yet from its serviceableness.

Grasses of North America for Farmers and Students. By W. J. Beal, Professor of Botany in Michigan Agricultural College. Published by the author, 8°., pp. xiii, 457. 1887. Price $2.50.

Profesor Beal is so well known as a teacher of botany that he does not need introduction to botanists by means of a book. In this volume, which is intended chiefly for farmers, he endeavors to put the subject in such a way as to inform his readers of the general structure of those forms of plant life in which they are so vitally interested. Chapters on the structure, form and development of the grasses, power of motion, plant growth, classification, native grazing lands, grasses for cultivation, early attempts to cultivate grasses, testing seeds, grasses for pastures and meadows, preparation of the soil, care of grass lands, etc., put the farmer in a fair way to cultivate his grass lands intelligently. Prof. A. J. Cook contributes a chapter on insects injurious to grasses and clovers, and Prof. William Trelease writes of the injurious fungi. Mr. F. L. Scribner has contributed much to the value of the work in his excellent drawings. This volume can not help being greatly useful to the farming community, while the promised second volume will be of no less interest to botanists, as it is to contain descriptions of all known grasses of North America, with illustrations of at least one species in each genus.

Microscopy for Beginners, or Common Objects from the Ponds and Ditches. By Alfred C. Stokes, M. D., pp. xiii, 297. New York: Harper & Brothers, 1887.

This delightfully written book comes to a place almost unoccupied among American publications. Its chief object is to aid the uninstructed owner of a microscope first, to an intelligent use of the instrument; second, to the identification of the common aquatic objects; finally, and *most important of all,* it seeks to point out unoccupied fields and stimulate to the persistent study of some special subject. Many persons possessed of a microscope have almost ruined it before they found out how to use it, and many others have been at a loss to know what they saw when water from some stagnant pool swarming with living organisms was examined. This book will do much to help the novice to the names of aquatic organisms, and the name once known, the search after information more extended than this guide could furnish can be intelligently prosecuted. It is to be hoped that every one who buys a microscope for his amusement will buy also this book and that he will be led by it to see that *he* can add to the sum of knowledge if he will only single out some group of organisms for steady work. We have no patience with that "microscopy" which occupies itself with looking at gold-plated diatoms and with making "beautiful mounts" of "triple-stained vegetable sections," caring not for structure if they are only "handsome!" Let the microscope be a tool for earnest study—not the plaything of an idle hour!

The book is amply illustrated with useful, though small, drawings—not pictures—and contains many helpful artificial keys to genera and species, with references to standard works of more special character. It deserves a large sale.

NOTES AND NEWS.

M. PHILIBERT describes a new Bryum, B. Corbieri from northwestern France in the *Revue Bryologique* No. 2, 1887.

DR. ALBERT KELLOGG, the veteran botanist of the Pacific slope, died March 31st, at Alameda, California, at the age of seventy-four years.

AN AMATEUR botanical club has recently been formed at Washington with a membership of about twenty-five. Miss Flora N. Vasey is secretary.

IN THE *Revue Bryologique* No. 2, 1887, Dr. S. O. Lindberg describes three new species of Hepaticæ from Portugal, Marsupella profunda, Anthoceros constans and A. multilobulus.

A YOUNG Italian mycologist, the Abbe Ben. Scortechini, an explorer of Australia and further India, died a short time ago at Calcutta. A genus of fungi commemorates his services.

THE AMERICAN ASSOCIATION for the Advancement of Science will meet in New York City, beginning August 10. It will probably be interestingly warm in the city at that date, but the sea beach is near.

DR. DIDRIK FERDINAND DIDRICHSEN, seventy-two years of age, died on March 19. He was professor of botany in the University of Copenhagen from 1875 to 1885, and for thirty years previous held important botanical offices.

THE CORNELL BOTANICAL CLUB, of Chenango County, New York, has recently been organized, with F. V. Coville as president. It is the direct outgrowth of the enthusiasm in the study of the flora of Central New York, emanating from Cornell University.

MR. A. P. MORGAN, in continuation of his "Mycologic Flora of the Miami Valley, Ohio," has just distributed a paper on Hydnei. The seven genera are represented as follows: Hydnum 30 species (one new), Irpex 6, Radulum 3, Phlebia 3, Grandinia 1, Odontia 2, Kneiffia 1.

ONE OF THE rarest and least known mosses of Europe, Didymodon subalpinus, has lately been collected in Switzerland, on the Rigi, at an altitude of 1,400 meters, by MM. Van den Broeck and Dens. Heretofore it has been known only from a small specimen without a capsule in the herbarinm of De Notaris.

PROFESSOR PENHALLOW, of Montreal, has issued a quarto memoir, reprinted from the Transactions of the Royal Society of Canada, on "Mechanism of movement in Cucurbita, Vitis, and Robinia." The memoir puts into final form the work already recorded by the author in the *American Journal of Science*, under the title "Tendril movements in Cucurbita maxima and C. Pepo," with some additional notes on the tendrils of Cucurbitaceæ.